

ABSTRACT

5 This invention discloses immunopotentiating agents which stimulate an immune response. These agents are categorized into single agents that act directly, adjuvants added concurrently with the agents, or heteroconjugates. Heteroconjugate agents elicit or enhance a cellular or humoral immune response which may be specific for an epitope contained within an amino acid sequence. Enhanced 10 hematopoieses by bone marrow stem cell recruitment was also a result of administering some of these agents.

15 Examples of immunopotentiating agents include monoclonal antibodies and proteins derived from microorganisms (e.g., enterotoxins) which activate T cells. One method of treatment disclosed uses only the immunopotentiating agent to stimulate the immune system. Another uses adjuvants in combination with the agent. A 20 third method employs heteroconjugates.

25 Heteroconjugates comprise: (a) an immunopotentiating protein which is characterized as having an ability to stimulate T cells; and (b) a second protein having an amino acid sequence which includes an epitope against which a cellular or humoral response is desired. This invention also relates to a method of preparing the heteroconjugate, and to a method of stimulating the immune system in vivo in a novel way. One route of stimulation is to activate T cells, in some instances, specific subsets of T cells, by 30 administering heteroconjugates containing an immunopotentiating protein and a second protein, to mammals. For this method of treatment, the second protein in the heteroconjugate is derived from abnormal or diseased tissue, or from an infectious agent; alternatively, the second 35 protein is produced synthetically by standard methods of

molecular biology. Sources of the second protein include tumors, viruses, bacteria, fungi, protozoal or metazoal parasites.

5 Monoclonal antibodies or T cells prepared from mammals
whose immune systems have responded to administration of the
heteroconjugate may be produced and administered to induce
passive immunity. A method of preparing a hybridoma which
secretes said monoclonal antibodies and use of these
10 monoclonal antibodies and T cells, are also disclosed. This
invention is also directed to a vaccine comprising the
heteroconjugate.

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